

# FLIGHT

The  
AIRCRAFT  
ENGINEER  
&  
AIRSHIPS

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

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## Flight

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### DIARY OF FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in the following list:

1922.

Nov. 16 .... Lecture, "The Co-relation of Model and Full-scale Work," by R. McKinnon Wood, before R.Ae.S.

Nov. 17 .... Lecture, "Oleo Undercarriage Design," by G. H. Dowty, before I. of Ae.E.

Nov. 30 .... Closing date for FLIGHT Glider Designing Competition

Dec. 1 .... Lecture, "Constructional Design of Aeroplanes," by C. W. Tinson, before I.Ae.E.

Dec. 15-  
Jan. 2 Paris Aero Exhibition

1923.

June .... International Air Congress, London

Dec. 1 .... Entries close for French Aero Engine Competition

1924.

Mar. 1 .... French Aero Engine Competition

Mar. 15 .... Entries close for Dutch Height Indicator Competition

## EDITORIAL COMMENT.



DURING the summer of 1923 an important International Exhibition will be held at Gothenburg, Sweden, to celebrate the 300th anniversary of the foundation of that important Swedish seaport. The exhibition is to open in May, and will not close until the end of September. During part of that period—

from July 20 to August 12, to be exact—an International Aircraft Exhibition is to be embodied which will, it is hoped, include representative contributions from the leading nations. Not only is it intended to exhibit aeroplanes, seaplanes, airships, equipment, etc., but it is hoped that it will be possible to arrange for squadrons from the air services of various countries to fly to Gothenburg, and to take part in demonstrations, competitions, etc., there.

In our Editorial Comments in last week's issue we referred to the formation of a propaganda squadron in France, and pointed out that some similar squadron, if formed in this country, could very usefully take part in the Swedish exhibition, and thus help in no small measure in doing useful propaganda work for British aircraft, as well as "showing the flag" in the most modern way, much as the Navy has done in the past. We still think that, under the exceptional position of aviation, the formation of such a squadron would be advisable, but, failing that, why should not the R.A.F. send a Squadron to Gothenburg for the three weeks that the exhibition is open? It is scarcely to be doubted that France will send her newly-formed propaganda squadron, and it will certainly not do for Great Britain to be unrepresented at the meeting.

Apart from the Service section, this country should be strongly represented on the civil aviation side. We know, and the majority of foreign nations know, that British aircraft is second to none in the world. But if we let other countries get ahead of us by sending aircraft, aircraft commissions, etc., all over the world, in many instances the people on the spot will snap up the business, no matter how good our machines may be. It will be a very considerable expense for our aircraft constructors to send machines to Sweden, and although a few of them might manage

to do so in spite of the unfavourable times, to be really representative a considerable number of different types should be sent.

This means that it is a matter for the British aviation industry collectively, rather than for individual firms, to tackle, and in this connection it should be up to the Government to render the assistance necessary. We strongly urge the Air Ministry to back up the Director of Civil Aviation with the Treasury. It is more than advisable, it is a necessity, for Great Britain to be well represented at Gothenburg. Elsewhere in this issue we publish a brief account of a gathering of the Swedish representatives of the "ILUG" (*Internationale Luftfarts Utställningen, Göteborg*) and representatives of the British aircraft industry at the Hôtel Métropole, at which the question of British participation was discussed. We sincerely trust that by the combined action of the S.B.A.C. and the Air Ministry the Treasury may be persuaded to grant such a sum towards the expenses incurred, that British aircraft may not be placed at a disadvantage compared with the aircraft of other nations.

**"Wanted,"  
a Prize for  
Low-Power  
Aeroplanes**

While the 1,000-guinea Prize, so generously offered by Mr. Gordon Selfridge, will undoubtedly do a great deal towards encouraging the development of gliders and the sport of gliding, and while hoping that several smaller prizes may be forthcoming for competition during next year, we cannot help thinking that, in the enthusiasm for gliding as a sport with great possibilities, owing to its low cost, we should not lose sight of the even greater future which may—we would even venture to say does—lie before the power-driven aeroplane with very small engine.

Let us not forget that A. V. Roe succeeded—12 years ago or more—in flying with an engine of 9 h.p., in spite of the very scant knowledge which we then had of aerodynamics and of aircraft construction. Surely if Roe could do what he did in 1909 or so, we could do very much better today, with the knowledge gained during the intervening years.

As a matter of fact, there is not the slightest reason to doubt that a small, light machine, weighing about 500 to 550 lbs., could be built today which would fly at about 40-45 m.p.h. if fitted with an engine of 12-15 h.p. To keep the "power-required" figure low, the machine would have to be lightly loaded, which would mean that the top speed would not be very high; in fact, it would have to be below the landing speed of a good many modern commercial aeroplanes. But one result of this would be that such a machine could land at 30 m.p.h. or less, could be put down in almost any field, and could, if properly designed, be made practically "fool-proof."

Now, in the present state of hand-to-mouth existence of the majority of our aircraft firms, there is very little money to spend on experiments. What, it seems to us is wanted, is an offer by some wealthy patron of aviation of a prize of £1,000 or so for the machine with a small engine which has the best all-round performance. Probably the best procedure would be to limit the engine cylinder capacity to a certain figure, and then award the prize to the entrant of the machine which did the best performance, awarding points for speed-range, climb, ceiling, cheapness of construction, stability and general "fool-

proof" qualities. If a prize were offered on these conditions there is little doubt that a number of engine and aircraft designers would be willing to enter on a "fifty-fifty" basis. At the present moment such a machine does not exist, and what is, perhaps, even more important, no really suitable engine for the purpose exists.

The majority of motor-cycle engines are somewhat inefficient, and are too heavy for the purpose. As it would probably be necessary to gear down the propeller in order to get good efficiency, some form of transmission would have to be incorporated. For such powers as are contemplated, however, probably a simple chain transmission would serve very well, unless an engine were produced somewhat on the lines of the Henry Potez exhibited at one of the Paris Aero shows, in which the cylinders pointed forward, the crankshaft being vertical and driving the airscrew through bevel reduction gearing.

There can be no possible doubt that a machine costing about £200, doing 40-50 miles per gallon of petrol and capable of landing in small fields, would find a ready market both at home and in the colonies, and although a machine of that speed could not always be guaranteed to make headway against strong winds, flying on it should be possible on a very large percentage of days during the year. A prize of £1,000 or so would ensure that several such machines would be produced, and we should then see the beginning of real sporting aviation. Who will come forward?

#### **Air- worthiness Certificates for Small Machines**

In connection with the low-power sporting aeroplane, a serious handicap to the development of this type exists in the form of heavy fees for airworthiness certificates. The lowest fee charged for such a certificate for a type aircraft is £65. Now it will be obvious that if a machine is to be produced at a cost of £150 to £200, such a fee is out of all proportion. It is conceivable that a goodly number of such machines would be built by amateur enthusiasts, and to hamper development by insisting on the payment of a fee of £65 is ridiculous, especially in view of the fact that the unnecessarily rigid regulations make obtaining the certificate compulsory. That there must be safeguards we readily grant, but in this case we cannot see that the regulation is anything but red tape gone mad.

There are not such a great number of new types being developed at the moment that the "stress-merchant" section at the Air Ministry—which has to be kept on whether or not any new machines are being produced at all—is working overtime. Surely these experts could easily manage to "stress-up" a few sporting aeroplanes at odd moments for a fee of £5 or so.

To make it any larger is merely hindering progress, and the present minimum of £65 is a fee which cannot be justified or tolerated. It is not as if stressing a machine according to stereotyped rules were a highly scientific procedure. Aeroplanes are not, in spite of, as Mr. North said in his paper before the Royal Aeronautical Society, "some pretence and humbug to the contrary," designed by science but by art, and to impose such fees for the checking of a few figures according to routine methods is the height of absurdity.



# THE HANDLEY PAGE W 8 C

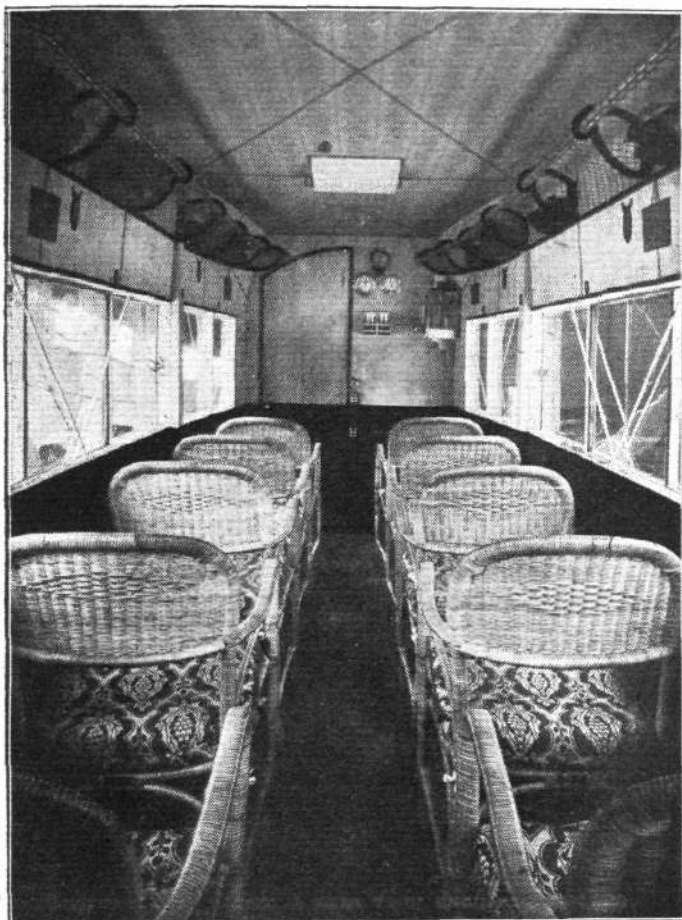
## Two Rolls-Royce "Eagle" Engines

EXPERIENCE having shown, and the new arrangement of the services (whereby Handley Page Transport, Ltd., operate the London-Paris route only) accentuating the fact, that it pays to carry passengers in preference to goods, Handley Page,

The new machines will differ but slightly in outward appearance, and not at all aerodynamically, from the older type, which has proved so successful during the past year.

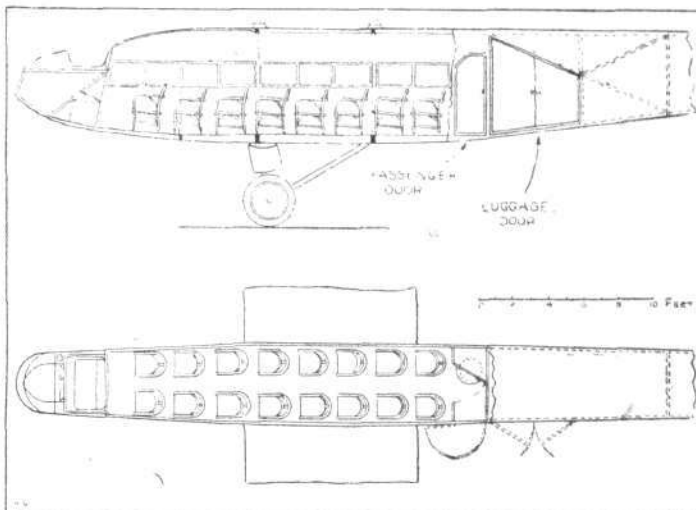
The W 8 C, as the new model will be called, will have approximately the same total loaded weight as the W 8 B, but the cabin is to be lengthened to give room for four more seats, while the freight carried aft of the cabin will be reduced by an amount equivalent to that of the four extra passengers. The extra length is to be obtained by doing away with the wireless compartment which, in the W 8 B, separates the cabin from the pilot's cockpit.

The total loaded weight of 12,500 lbs. of the W 8 C will be composed as follows:—Weight of machine light (but with



The Handley Page W 8 C : This photograph was taken inside the saloon of one of the W 8 B machines, but the saloon of the new type will look exactly similar, except that there will be 16 seats instead of 12.

Ltd., of Cricklewood, have decided to build for next year's services a modified type of twin-engined machine which will have passenger accommodation for 16 passengers instead of the 12 passengers for which the present W 8 B's were designed.

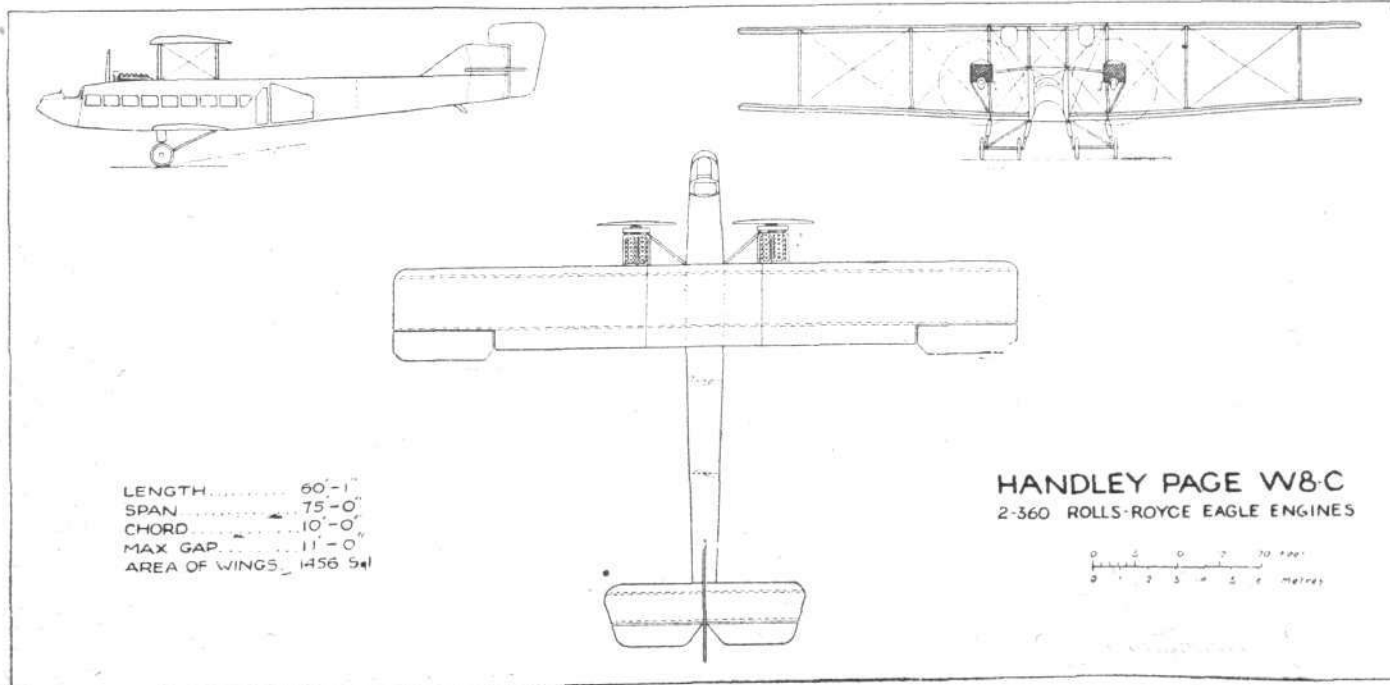


The Handley Page W 8 C : Section and plan of Saloon.

cooling water), 7,200 lbs.; pilot, 160 lbs.; petrol for 3½ hours (137 gallons), 1,000 lbs.; oil (10 gallons), 100 lbs.; 16 passengers (at 180 lbs.), 2,880 lbs.; freight, 1,160 lbs.

The performance will, of course, depend somewhat upon the load carried; but it is of interest to compare the performance with full load with that attained when passengers only, and no freight, are carried. These figures, it should be noted, are certified and not estimated figures:—

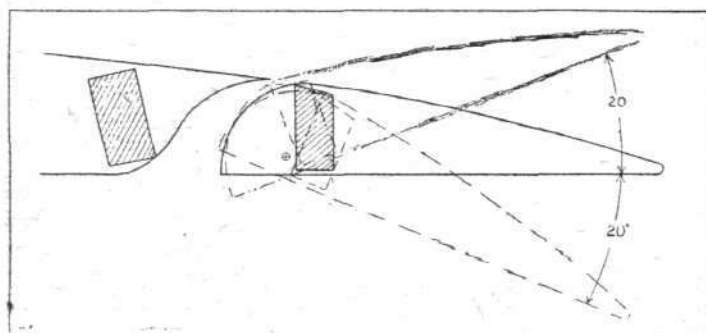
Loaded weight	12,500 lbs.	11,500 lbs.
Max. speed at 1,000 ft.	96 m.p.h.	101 m.p.h.
Ground rate of climb	370 ft./min.	425 ft./min.
Service ceiling	7,500 ft.	8,700 ft.
Landing speed	44 m.p.h.	42 m.p.h.
Run to "get off"	320 yards	300 yards
Run to "pull up"	240 "	240 "



The Handley Page W 8 C : General Arrangement Drawings.

The cruising speed will naturally vary somewhat according to the load carried, but it is expected that an average of about 85 m.p.h. will be maintained. Taking the power of the Rolls-Royce "Eagle" engines as 360 h.p. each, the power expenditure per passenger carried (with full load, of course) is 45 h.p., which is a very reasonable figure, considering that the speed (at full power) is round about 100 m.p.h. At cruising speed the economy is naturally even better. Looked at in another way, the useful load carried is 4,040 lbs., or 5.6 lbs./h.p. at maximum power; somewhat greater at power corresponding to cruising speed. From the point of view of performance, it cannot be denied that there are in existence single-engined machines which, with the same power expenditure per passenger, have a considerably greater speed; but the makers and users of the Handley Page aeroplanes maintain that the speed is sufficient, while the splitting-up of the power plant into two units results in greater security, as simultaneous failure of both engines is a most unlikely happening.

In this connection it is of interest to remark that tests at Martlesham Heath have shown that, with a weight of 12,500 lbs., the machine can be flown straight, although losing height slightly, whereas with slightly less than full load, *i.e.*, when the total weight is about 11,500 lbs., the machine will actually remain aloft with only one engine running. As it is probably not on a great percentage of trips that machines are loaded up to the maximum of their capacity, it is claimed that the twin-engined machine affords every chance of



The Handley Page W 8 C: Diagram of slotted and balanced aileron

reaching a safe emergency landing ground in case of engine failure, and certainly the record of Handley Page Transport on the London-Paris route would appear to bear out this contention. Another feature of the W 8 B's, which will be retained in the W 8 C, is the low landing speed. The actual figure is round about 40 or 42 m.p.h., but it appears to be less, probably owing to the size of the machine. In watching the Handley Page machines "float" into Croydon aerodrome, one never has the anxious feeling with which one often watches small, fast machines, and if experience has proved that the lower top speed is sufficient, there does not appear to be any very good cause for retaining high landing speeds. The subject is, however, a controversial one, and one upon which we do not propose to enter here.

As already mentioned, the main alteration will be to the saloon, the length of which is to be increased to 23 ft., so as to afford accommodation for 16 seats, placed along the sides of the cabin, with a passage down the centre. In the W 8 B there was a wireless compartment between the saloon and the pilot's cockpit. In the latest model this will be omitted, and the cabin will extend forward right up to the bulkhead behind the pilot. One result of this arrangement will be that the passengers—those in the front seats, at any rate—will obtain a very excellent view, and as a matter of fact, all passengers in a Handley Page have a fairly good view, owing to the placing of the Rolls-Royce engines well up in the gap between the wings and forward of the leading edge.

The cabin arrangement, apart from the extra seats, will follow closely that of the older machines. Entrance is by a door on the port side, this door being securely fastened before the machine leaves the ground. On the forward wall of the

cabin will be mounted such instruments as clock, altimeter and airspeed indicator. A map of the route will also be placed on the wall, so that passengers will be able to follow the progress of the machine, a fact which adds considerably to the interest of the journey. A door will communicate with the pilot's cockpit, should it become necessary for any reason to do so. At the aft end of the saloon will be a lavatory, similarly arranged to that of the W 8 B's, in which, during the journey, a transverse door separates it from the saloon. On landing this door closes back and shuts off entirely the lavatory, while giving access to the exit. This arrangement is particularly neat, and saves a considerable amount of space.

Large Triplex windows will be provided in both sides of the saloon, some of which will be made to open, thus forming emergency exits. Further exits will be provided in the form of ripping panels, so that in case of emergency the passengers should be able to leave the cabin in a minimum of time.

Behind the saloon will be a large freight compartment, measuring 10 ft. in length by 3 ft. 6 ins. in width, and having an average height of 5 ft. 2 ins. The cubic capacity of this compartment will be 178 cu. ft. The door in the port side leading to this compartment will be of large dimensions, and will open in the centre so as to leave an unobstructed opening through which bulky goods may be passed. In order to trim the machine according to load, the man who looks after the loading will know how great is the weight of the contents of the freight compartment, and if heavy freight is carried and the saloon is not full, the aft seats will be locked by a strap running across from one arm rest to the other, thus preventing the passengers from using these seats and thus make the machine tail-heavy. (A wag has suggested that a more positive method would be to lock the passengers in their seats by aforesaid straps, but some might object to this procedure!)

The pilot, placed as he is in the nose of the fuselage, will have a particularly good view in all directions. An extra seat will be provided next to the pilot, for use by an engineer or navigator, should it be desired to carry one for special purposes. A complete wireless outfit will be carried, and it is possible that a "listening-in" set will be fitted in the saloon for the benefit of the passengers.

The power plant will consist of two Rolls-Royce "Eagle" engines, mounted on a structure of steel tubes some distance above and in front of the lower plane. The engines will not be cowled-in, with the result that smaller radiators can be fitted, while access to the engines, or even their removal and replacement, will be greatly facilitated.

As in the W 8 B, the main petrol tanks will be gravity tanks, thus avoiding all pumps, piping, etc. In the new machines, however, the tanks will be slung underneath the top plane, and not mounted on top of it. Each tank will have a capacity of 100 gallons, and the petrol will flow to the engines through metal tubes, incorporating metal couplings of the R.A.F. pattern so as to avoid the use of rubber in the petrol system.

It has been stated that aerodynamically the W 8 C will not differ at all from the W 8 B. This is not strictly accurate, as slotted ailerons will be fitted. The section of these is shown in the accompanying diagram. As the aileron trailing edge moves down, the slot is opened, while on the opposite side the aileron moving up closes its slot. Normally the slots are very slightly open, but as they are the same on both sides, this will not affect the flying of the machine. It should be pointed out that this form of aileron has been found to give excellent results. Not only are slotted ailerons very effective, so that a very small movement suffices, but they have been found to retain their effectiveness right up to the stalling angle of the wings, while the forward projection serves as a balance, and the load on the control column is quite small in proportion to the rolling couple produced by the ailerons.

Although Rolls-Royce engines will be fitted as standard, Napier "Lion" engines of 450 h.p. each may be fitted with this type of machine, with a resulting improvement in performance. The weight will then remain practically the same as before, but the performance will be: Maximum speed near ground, 120 m.p.h.; ground rate of climb, 750 ft./min.; service ceiling, 12,000 ft.; landing speed, 44 m.p.h.

## Wireless-controlled 'Planes in America

FROM Washington it is announced that the U.S. Army Air Service have recently made very successful tests with wireless-controlled aeroplanes. It is reported that flights of over ninety miles have been made by machines carrying no pilot, being controlled by wireless from a ground base. So

successful are the tests said to have been that American authorities have declared that one can now foresee the possibility of making aircraft which, controlled by wireless from a ground base, will carry great loads of bombs to a distant point and either crash there with their load or drop the bombs, the machine returning to its base.



# GLIDING, SOARING AND AIR-SAILING

*Those wishing to get in touch with others interested in matters relating to gliding and the construction of gliders are invited to write to the Editor of FLIGHT, who will be pleased to publish such communications on this page, in order to bring together those who would like to co-operate, either in forming gliding clubs or in private collaboration.*

ONLY two more weeks remain in which to send in designs for gliders for the competition organised by the proprietors of FLIGHT. The closing date is November 30, and no designs submitted after that date will be considered in connection with the competition. All drawings submitted must be in Indian ink on white paper or tracing cloth, and the proportions of sheets should be such as will reduce to a full page in FLIGHT.

GENERAL arrangement drawings, comprising side elevations, front elevations and plans, must be sent, and all areas and main dimensions marked on the drawings. Details of main constructional features must be sent, although working drawings of every minor detail are not insisted upon.

AERODYNAMICAL estimates, a chart of gliding angles and stress diagrams of the more important structural members must be sent. The estimates must be based upon recognised data of wing sections, etc., and the source of the information upon which the estimates are based must be stated.

ALL drawings, tables, sheets of matter, etc., must be marked plainly with a *nom de plume*, and an envelope containing the name and address of competitor, and marked on the outside with the *nom de plume* chosen, must accompany all designs submitted. The designs will be judged without the judges being aware of the identity of the authors, as the envelopes containing the proper names will not be opened until after the awards have been made.

FULL particulars of the regulations were published in our issue of August 31, 1922.

NOVEMBER 30, do not forget.

With reference to our remarks in last week's issue on the competition for the Selfridge £1,000 Prize for covering a distance of 50 miles in a glider, we have received from Mr. J. F. Leeming, of 38, Albert Road, Hale, Cheshire, the following communication:—

"This prize is, I take it, offered for open competition to the whole of Great Britain, and the suggestion that the official starting-point should be fixed either on the North or South Downs places Scottish and northern competitors at a serious disadvantage. The cost of sending a glider by train or road from such a place as, say, Manchester would in most cases prevent the entry of northern flyers: remember that most of the new glider pilots are not wealthy men, but simply taking the hobby up as a sport, and cannot afford to spend £100 or so in carriage, storage and lodgings for the pilot and assistant. The fairest starting-place—if a fixed starting-place must be named—would be somewhere in the centre of England; or, better still, why not allow the glider to start from any point in Great Britain? This would allow the pilot to choose the best weather, and each would have the advantage of knowing something of the country he was to fly over. By fixing a given point in the south of England the local man would not only know the ground better, but be on the spot with all the advantage that means. I quite realise that a place handy for London is a convenience for R.Ae.C. officials and others, but what about the northern and western flyers? Gliding is being taken up in the north just as keenly as round London.

"I speak as one not new to gliding, for as far back as 1911 a description of one of my gliders was published in the old *Aero*, and I am simply appealing for fair play for the northern flyers."

THERE is certainly a good deal to be said for our correspondent's suggestion of letting competitors start from any point they choose; but the expense of sending Royal Aero Club officials all over the country would be very considerable. Perhaps, however, it might be possible to divide the country into a (relatively small) number of districts, and to appoint locally representatives of the R.Ae.C. to act as official time-keepers and observers. It should not be necessary to have more than four districts (if this number of suitable districts

can be found), and in this manner competitors should not be obliged to travel very far from home. To let every competitor start from any point he preferred would entail a number of officials greater than the number of competitors, and is obviously unworkable.

FROM Germany it is reported that some of the competitors who had taken part in the Rhön gliding competitions have found themselves without sufficient cash to send their machines home, the railway freight charges having been doubled since the machines were sent to Rhön, and that as a result several students have had to start on foot, towing their machines. From Berlin a party of students is said to have started out to meet their comrades, and to be attempting to collect sufficient funds to enable the machines to be sent home by rail. If the story is true, we must say we admire the grit of the students who chose this means of getting their machine home rather than leave it to rot in the Rhön hills.

THE regulations for the Dreyfus Prize for gliding have now been drawn up. The prize is divided into two sections of 10,000 francs each. The first section will be awarded to the French pilot on a French machine who, before April 30, 1923, has covered the greatest distance in a closed circuit, the distance to be at least 25 kms. (15½ miles). For the second 10,000 francs the time limit is April 30, 1924, and the regulations are the same, with the exception that the minimum distance to be covered is 75 kms. (46½ miles). In addition to the prizes M. George Dreyfus has also offered a cup, which will be won permanently by the winner of the second year's prize, although the winner of the first year's prize will temporarily be the holder of the cup. We do not know what, in the opinion of the judges, will constitute a "closed circuit." Strictly speaking, a flight up and down a range of hills, 7½ miles each way, would be a closed circuit, provided the homeward trip was made further away from, or closer to, the hill-side than the outward journey. If this interpretation is allowed, it should not be difficult to win the prize, but probably a course approaching more to a circle will be insisted upon.

At a banquet given on November 14 by the French Society "Vieilles Tiges" (freely translated "Old Beans") M. Laurent Eynac, French Under-Secretary of State for Air, handed the Cross of the Legion of Honour to M. Maneyrol in recognition of his performance in the *Daily Mail* Competition, when he remained in the air for 3 hrs. 21 mins. 7 secs., thus establishing a world's duration record. We wonder what official recognition Raynham would have received had he been the successful competitor.

THE de Havilland Aircraft Co. are at present engaged upon the design of a small sporting machine, to be fitted with a low-power engine. We are not, at the moment, allowed to publish any details, but it may be stated that the engine will not be of more than 12-15 h.p. and that the machine will be able to fly at very low speed so as to alight in quite small fields and—what is, perhaps, more important still—get out of fairly restricted areas. It is hoped, in spite of the low engine power, to have a considerable margin available, so that the engine will not need to be run all-out except for getting off.

IN reply to a number of enquiries we have received regarding the small two-cylinder opposed engine exhibited at one of the Paris Aero shows by the Clerget firm, we learn that this engine is no longer being manufactured, and that, as a matter of fact, only one or two experimental engines were made. Perhaps, in view of the revived interest in the "moto-aviette," the firm may be tempted to reconsider their decision. The engine was a very pretty piece of work, and its 16 h.p. was just about the right size for a really low-power machine. The drive was, however, direct, and it appears probable that to get good airscrew efficiency with the low horizontal speeds that will be attained, some form of gearing might be advisable.

A COMPETITION for model gliders was held at the Hamble works of A. V. Roe and Co. on Sunday last for a prize offered by Mr. C. W. Tinson. Thirty-five models had been entered, and twenty-four faced the starter. Mr. Tinson's prize was for £1, and was won by Mr. Frank Bastow, whose model made several glides of between 450 and 500 ft. (starting from a water tower 60 ft. high). Subsidiary prizes were

offered by Mr. A. V. Roe, Mr. Blazdell, Mr. Colvert and Mr. Roferson. Mr. Tinson has since obtained the remarkable distance of 920 ft. (or a gliding angle of 1 in 15½) with a paper model weighing 1½ ozs. The model was flying against

the wind for the greater part of the time, and while out over the aerodrome, where one would not expect any up-currents, it darted up from a height of about 12 ft. to over 50 ft. from the ground.

### An Opportunity for the British Aircraft Industry

THE official *Gazette* of Madrid announces that the Spanish Government is asking for tenders for seventy aeroplanes of three different types, i.e., thirty "Chasers," thirty Reconnaissance machines, and ten Bombers. These tenders should form an excellent opportunity for the British aircraft industry, as doubtless the types accepted will be definitely adopted by the Spanish Government.

Already there are in Spain a fair number of British machines, and they are all well liked by the Spanish pilots. Owing, however, to intensive French propaganda, the French industry has scored rather heavily, indicating once more the extremely great value of timely and consistent propaganda where aircraft is concerned. The assistance given to French aircraft firms by the French Government has enabled them to send out missions to a number of countries, with the result that French machines have, in many instances, been adopted, whereas if British firms had been equally well represented there is little doubt that this country would have received a good many more orders than has been the case.

Spain is a country offering great possibilities, and signs are not lacking that it intends to take up aviation on quite a large scale. This will be even more the case when the proposed airship route to South America begins operations. In preparation for that time it is worth while to get British aircraft introduced in the largest possible numbers, and the present demand for tenders would appear to offer an excellent opportunity for doing so.

### Manchester Chamber of Commerce Support Aviation

THE importance of rapid transit is appreciated nowhere in the world more than in Manchester, and the constant success of the Daimler Airways Manchester-London service is already bearing valuable fruit. On November 13 the service was referred to at a meeting of the Manchester Chamber of Commerce by the President, Mr. W. Clare Lees. Manchester, he said, with its large foreign trade, offered a splendid opening for the development of an aerial mail service, and it was the business of the commercial community to let the aviation

companies and the Post Office authorities know what developments to the air service would be of most service to trade. He, therefore, proposed that the chamber should form a committee to watch commercial aviation. The committee would be composed of members having interests in Manchester's foreign trade, together with men whose practical experience of aviation would enable the committee to keep its discussion within the bounds of possibilities.

The board unanimously approved of the formation of a committee, with the president as chairman.

### German Aircraft Firm in Denmark

FROM Copenhagen it is reported that arrangements have been completed for the German "Rofawerke" to establish a branch in Denmark. Mr. Erik Hildesheim, who, in spite of his German name, is a Dane, is mentioned as the Danish manager, and it is stated that Herr Ing. Rohrbach will be technical director of the new firm. At first it is intended, the report states, to build twin-engined seaplanes fitted with two Rolls-Royce "Eagle" engines.

With reference to above announcement, we have received from Rolls-Royce, Ltd., the following statement:—

"We should be obliged if you would make it clear to your readers that we are not supplying engines to the Rofawerke firm, nor have we had any communication with them."

"It seems probable, therefore, that if the Rofawerke firm are fitting Rolls-Royce aero engines to aircraft intended for German use the engines are the old type of engine (known as 'Eagle VIII'), which were designed and built many years ago, and are now completely out of date. We are now producing a later and considerably improved design known as the 'Eagle IX.'"

"It is known that the British Government had a large number of the now obsolete 'Eagle VIII' engines on hand at the time of the Armistice, and we believe that these redundant engines are still being disposed of, directly or indirectly, to foreign governments and others."

"B. JOHNSON, General Manager, Rolls-Royce, Ltd.,  
14-15, Conduit Street, W. 1. Nov. 10, 1922."

## THE LONDON-CONTINENTAL SERVICES

### FLIGHTS BETWEEN NOVEMBER 5 AND NOVEMBER 11, INCLUSIVE

Route (including certain diverted journeys)	No. of flights*	No. of passengers	No. of flights carrying		No. of journeys completed†	Average flying time	Fastest time made by	Type and (in brackets) Number of each type flying
			Mails	Goods				
Croydon-Paris ...	12	34	4	9	10	2 41	H.P.W.8BG-EBBG (2h.11m.)	B. (1), D.H. 9 (3), G. (5), H.P.W.8B (3).
Paris-Croydon ...	12	32	2	8	9	3 1	H.P.W.8BG-EBBG (2h.27m.)	B. (1), D.H. 9 (2), G. (4), H.P.W.8B. (3).
Croydon-Brussels-Cologne	4‡	10	1	—	4	4 1	D.H. 18 G-EAWX (3h.37m.)	D.H. 4 (1), D.H. 18 (1), D.H. 34 (2).
Cologne-Brussels-Croydon	4§	16	3	—	4	5 18	D.H. 18 G-EAWW (4h.46m.)	D.H. 4 (1), D.H. 18 (1), D.H. 34 (2).
Croydon-Rotterdam ...	5	5	5	5	5	2 29	Fokker H-NABM (1h.53m.)	F. (4).
Rotterdam-Croydon ...	3	—	3	3	3	3 22	Fokker H-NABR (2h.54m.)	F. (3).
Manchester-Croydon-Amsterdam	7	42	1	—	6	5 8	D.H. 34 G-EBBY (5h.2m.)	D.H. 34 (3).
Amsterdam-Croydon-Manchester	10¶	30	3	2	10	—	—	D.H. 9 (1), D.H. 34 (3).
Total for week ...	57	169	22	27	51			

\* Not including "private" flights.

‡ Croy.-Brus. 1.

§ Brus.-Croy. 1.

† Including certain journeys when stops were made en route.

|| Man.-Croy. 3, Croy.-A'dam. 2.

¶ A'dam.-Croy. 4, Croy.-Man. 6.

Av. = Avro.

B. = Breguet.

Br. = Bristol.

Bt. = B.A.T.

D.H.4 = De Havilland 4, D.H.9 (etc.).

F. = Fokker. Fa. = Farman F.50. G. = Goliath Farman. H.P. = Handley Page. M. = Martinsyde. Sp. = Spad. Vi. = Vickers Vimy. Vu. = Vickers Vulcan. W. = Westland.

The following is a list of firms running services between London and Paris, Brussels, etc., etc.:—Co. des Grandes Expresses Aériennes; Daimler Hire, Ltd.; Handley Page Transport, Ltd.; Instone Air Line; Koninklijke Luchtvaart Maatschappij; Messageries Aériennes.

Incidental Flying.—Messrs. Courtney, Macmillan, Perry, Piercey and Capt. Stocken between them tested five Avros and one D.H. 9 at Croydon for the Aircraft Disposal Co., and flew them to Brussels.





# LONDON - TERMINAL AERODROME

Monday evening, November 6.

A WONDERFUL mixture of weather during the past week has interfered with the regularity of all the services, but on no day has it managed to hold up flying completely. On Wednesday one of the worst gales experienced on the "airways" for some considerable time was responsible for the cancelling of the Paris and Cologne services; but the K.L.M. and Daimler Airway ran certain of their services on the Manchester-London-Amsterdam route. From Manchester, a Daimler 34, piloted by Mr. Robertson, and carrying six passengers, had a three-hours' fight with the gale before finally alighting at Croydon, while Mr. Herne, piloting another Daimler 34 from Amsterdam to Croydon, had to land no fewer than three times in order to fill up with petrol. His total flying time was over five hours, but, despite the head wind and the buffeting, he succeeded in reaching Croydon. From Croydon to Amsterdam one of the K.L.M. Fokkers, piloted by Mr. Schmerhoff, and carrying one passenger and a load of goods, managed to complete the journey. After leaving Croydon the gale drifted it over in the direction of the Thames estuary, so Mr. Schmerhoff headed his machine into wind, and was last seen making in the direction of Southampton, with the evident intention of getting well to the south-west before allowing the gale to carry him in the direction of Lympne.

## Mr. Robertson's Adventure in Rain, Mist and Smoke

ON Friday rain and mist made flying difficult, especially on the Manchester route, and one of the Daimler machines, flying from Manchester to Croydon with six passengers, encountered rain all the way until, north of London, the rain and mist, combined with the usual "smoke screen" from London, made it impossible for the machine to get through. I understand, in fact, that the weather was so bad that the machine actually passed over Stag Lane aerodrome, but the pilot was evidently unable to see the Very lights which were fired from there, and eventually made a forced-landing in a field near Harrow. Owing to the small size of the fields in the neighbourhood, Mr. Robertson, the pilot, was unable to get his plane down undamaged, and, after an encounter with a tree, the machine came down heavily and was badly damaged. None of the passengers were hurt, however, and were able to continue their journey to town by ordinary land transport. The machine was taken over to Stag Lane to be rebuilt.

The Instone Air Line have been making extensive alterations to their offices on the aerodrome, and these are more like a rabbit-warren than ever. To the uninitiated, the difficulty of finding any particular office has to be overcome by the provision of a guide, but the inhabitants of the office seem to be able to find their way about; and no doubt the whole scheme may be conducive, in the end, to business efficiency. Maj. Greer has certainly made alterations in the working of the Instone Air Line since he took over the reins of management.

## Another Record Air-Taxi Flight

MR. ALAN J. COBHAM, of the De Havilland air-taxi service, left Croydon on Tuesday *en route* for Cairo, and probably Bombay. He is flying by way of Nice, Rome, and Athens to Cairo, and will then follow the R.A.F. route to Bagdad, and thence on to Karachi and Bombay. He was accompanied as far as Nice by his wife and mother, and will pick up his "fare" for this record trip at Nice. Mr. Cobham expects to be away about six weeks.

Mr. Barnard, also of De Havilland's, left for Holland on Saturday with a newspaper photographer to get pictures of the ex-Kaiser's wedding, but I understand that he was not allowed to leave with them yesterday by the Dutch military authorities.

I learn that the German Government have now given official sanction for the running of the London-Berlin air service by the Daimler Airway, and have also extended the concession of running to Cologne, which they had granted to the Instone Air Line for the month of October. There is, however, no definite news as yet as to the date of the opening of the next section of the Berlin line.

Handley Page Transport continue to get practically full loads for their machines, but on several days this past week they have "washed out" their services in both directions, which has pulled their weekly total down considerably. Passenger traffic on the Cologne line has shown rather a falling off, while that on London-Amsterdam has been about normal. It is on the Manchester service that the most surprising results have been attained. Passengers have increased by 25 per cent.

over last week's total, no fewer than 50 air travellers booking tickets during the week. Judging by today, there promises to be an increase on the figure this week, eight passengers travelling from Manchester in the 9.30 a.m. machine.

Some quick journeys have been made on the Manchester line. On Saturday one of the Daimler 34's flew from Manchester to London in 1 hour 25 minutes, while during the week a machine which left Croydon for Manchester in the early morning completed a return journey in a flying time of only 3½ hours, or actually less time than is taken by the train for the single journey.

I understand that Messrs. D. Napier and Sons are shutting up their Croydon depot at the end of the month. This is due to the fact that engine orders have—for the time being, at any rate—fallen off to such an extent that rigid economies have to be made in working expenses.

Tonight (Monday) at the Greyhound Hotel, Croydon, was held the annual aerodrome dinner, our Director of Civil Aviation, Maj.-Gen. Brancker, having promised to take the chair, and the occasion being further graced by the attendance of various foreign air attachés.

Monday evening, November 13

NOVEMBER fogs have set in and are dislocating the various air services. One of the outstanding features, however, has been the regularity of the inland service between London and Manchester. This has, in fact, confounded the critics. It has been said ever since commercial flying began that air services in England would be difficult to run to schedule owing to inland mist and the smoke which is sent up from the great industrial centres in the Midlands. But up to the present a much greater regularity has been maintained on this London-Manchester service than on the Continental services.

Another striking feature of this inland service is that not only are the number of passengers travelling by this line exceeding all expectations, but the total is growing week by week. Up to the present 143 passengers have travelled by this line, and last week's total of 53 was higher than any week since the service began. On Saturday, although only six passengers had booked for the flight from London to Manchester, when the car arrived at the Grand Hotel to pick up the passengers, it was found that there were 11 people waiting with their handbags—the extra five having arrived on the off-chance of there being vacant seats.

## Air "Specials" Defy the Fog

ON Friday the weather was so bad—a mixture of fog on the Continent and gales in England—that all the services with the exception of the Manchester route and one K.L.M. Fokker (which got through from London to Rotterdam) were suspended. Saturday was little better, but some of the services ran, and, in addition, several "specials" flew between London and France. Capt. Muir, piloting the Surrey Flying Service's new D.H. 9, flew to St. Inglevert to fetch a man who had telephoned through from there for an "air-taxi," and several machines went to France for various newspapers in order to bring back photographs of Armistice Day happenings.

Owing to the condition of Brussels aerodrome, the Instone Air Line have been compelled to suspend their service to this air-station. Levelling operations are being carried out, and the ground has become a quagmire in consequence.

The Instone Air Line are now endeavouring to carry out the London-Cologne service with two D.H. 18's, these being the only two machines with sufficient petrol capacity for the non-stop flight from Lympne to Cologne. Machines now leave Croydon and stop at Lympne for petrol, afterwards making a non-stop flight from there to Cologne.

General Festing, Controller of Aerodrome Licences in Great Britain, flew over to Brussels on the Instone D.H. 4A piloted by Mr. Powell, on Thursday, in order to inspect the aerodrome there, and consult with the Belgian authorities as to the state of affairs. He returned by air on Saturday.

Mr. Alan J. Cobham returned to Croydon from Cairo on Wednesday. He stated that his "fare" had been taken ill, and that when he (Mr. Cobham) arrived at Monte Carlo his "fare" had been moved to a nursing-home, and was unable to make the projected flight. It was, however, arranged that the flight should be made at some future date.

Among the passengers on the north-bound "air express" to Manchester during the week was the wife of one of the candidates for a Cheshire division, who was flying to Manchester in order to be in time to attend an election meeting in the constituency the same evening.

For the past two days fog has disorganised the services, although the Manchester-London route has been maintained.

## AN IMPROVED U.S. MAIL 'PLANE

THE following interesting report on an improved American D.H. mail 'plane appeared in a recent issue of our American contemporary, *Aviation*. Some time ago the U.S. Air Mail Service began experiments with a view of increasing the capacity of the D.H. equipment employed in mail work, in the course of which a special fuselage was built for machine No. 299, having 40 cu. ft. of cargo space. It was found, however, that the original R.A.F. 15 wing section was not suitable for the additional load and increased resistance. A special set of wings (A 2) were, therefore, obtained from the Aeromarine Co., and these fitted instead. From the following data of results obtained with this machine under actual service conditions on the New York-Cleveland route, it will be seen that expectations have been more than realised.

and 7 ft. 6 in. pitch, which is about 4 m.p.h. slower than the average standard D.H. machine (U.S. Mail).

Perhaps the most outstanding feature of this modified D.H. is the slow speed at which it will cruise and maintain its altitude with 800 lbs. load; it has been flown for a period of 20 mins. at 1,075 r.p.m. with an air speed of approximately 68 m.p.h. without losing any altitude, and having fair manoeuvrability at all times. It does not have a tendency to slip off on a wing as the D.H. does at the slower speeds; in fact, it seems very difficult to make it side-slip, and its tendency is to settle flat in a stall.

Tests have shown a climb of 800 ft. in the first minute and 5,150 ft. in 10 mins. with 800 lbs. load, as compared with 1,000 ft. in first minute and 6,500 ft. in 10 minutes with the



The converted D.H. Mail 'Plane of the U.S. Air Mail Service referred to on this page. It is fitted with A2 wings, and has 40 cu. ft. of cargo space.

The actual over ground speed flying between New York and Cleveland of this machine is only slightly less than that of the regular D.H. with R.A.F. 15 wing, and a certain amount of this loss in speed might be attributed to the larger fuselage. The average speed on five trips over the same route was 96.34 m.p.h., while the speed of the standard D.H., which was flying in opposite directions on the same days, was 97.8 m.p.h. The average load of the latter machine was slightly over 400 lbs., while on three of the five trips made by 299 the load was 800 lbs.

It is very interesting to note that loading up to 800 lbs. did not show any marked difference in the speed, and there is every indication that the A 2 wing curve can be loaded up to 12 lbs. per square foot, and give a very satisfactory performance even at the slower speeds. As to maximum speed, it has been found that the 299 will do 115.3 m.p.h. at 1,725 r.p.m., with the regular club propeller 9 ft. 2 in. diameter

standard D.H. with 400 lbs. load. While the 299 has not the "zoom" that the D.H. has, it will climb at a higher angle and at considerably slower speed. It was found that the best climbing angle is at an air speed of 70-75 m.p.h., while the D.H. climbs at a considerably higher speed.

A special trip from New York to Washington with 1,032 lbs. load, was recently made, and even with this load the performance was very good, and the cruising speed satisfactory, although the machine was making a head wind. The landing speed is 50 m.p.h. with 800 lbs. load, as compared with 60 m.p.h. for the D.H. with 400 lbs. load. The length of run on the ground for take-off is approximately the same with the D.H., while the time element is slightly greater: when 299 gets off with 800 lbs. load in 11 secs., the D.H. with 400 lbs. load, rises in 9 secs. Streamline wires and other minor refinements are being installed, which will improve the speed and performance somewhat.

### NOTICES TO AIRMEN

#### Holland. Night Landing in Schiphol Aerodrome

LANDING at Schiphol aerodrome is prohibited between sunset and sunrise.

The landing searchlights are not now in operation, and the general lighting of the aerodrome has been reduced, but the vertical row of white lights on the W/T mast is still lit each evening, for purposes of safety, from half an hour after sunset until two hours after sunset. No. 123 of 1922.

#### NOTICE TO GROUND ENGINEERS

##### Rolls-Royce "Eagle VIII" Engines: Friction Anchorage

THE correct method of assembling the friction plates, whether keyed or not, in the anchorage unit of Rolls-Royce "Eagle VIII" engines is as follows:—

(1) Fit anchor ring G. 6405 into the epicyclic gear-box G. 6386.

(2) Slip in one of the non-keyed plates (which are stiffer than the friction plates, with the object of sustaining the load).

(3) Place in position the various keyed plates one after another.

In one or two instances recently it has been observed that the non-keyed or backing plate has been left in position in the aluminium gear-box, and the anchor ring then added. Since, in this way, the backing plate is left with no spigot attachment, it has jammed back underneath the anchor ring and cracked the aluminium case which supports it.

(No. 11 of 1922.)

#### Wormwood Scrubbs as London Terminus

ON Friday next, November 17, a series of tests will be made to determine the suitability of Wormwood Scrubbs for an air terminus. Various firms have been asked to send machines with full loads in order to make landings and starts from "The Scrubbs" before representatives of the advisory

committee recently formed to enquire into the desirability of securing a terminus nearer to the centre of London than is Croydon. Handley Page Transport, Ltd., will send a machine carrying 12 passengers, or the equivalent weight in ballast. The machine is to leave Croydon about 9.30 a.m., and should arrive over Wormwood Scrubbs a few minutes later.



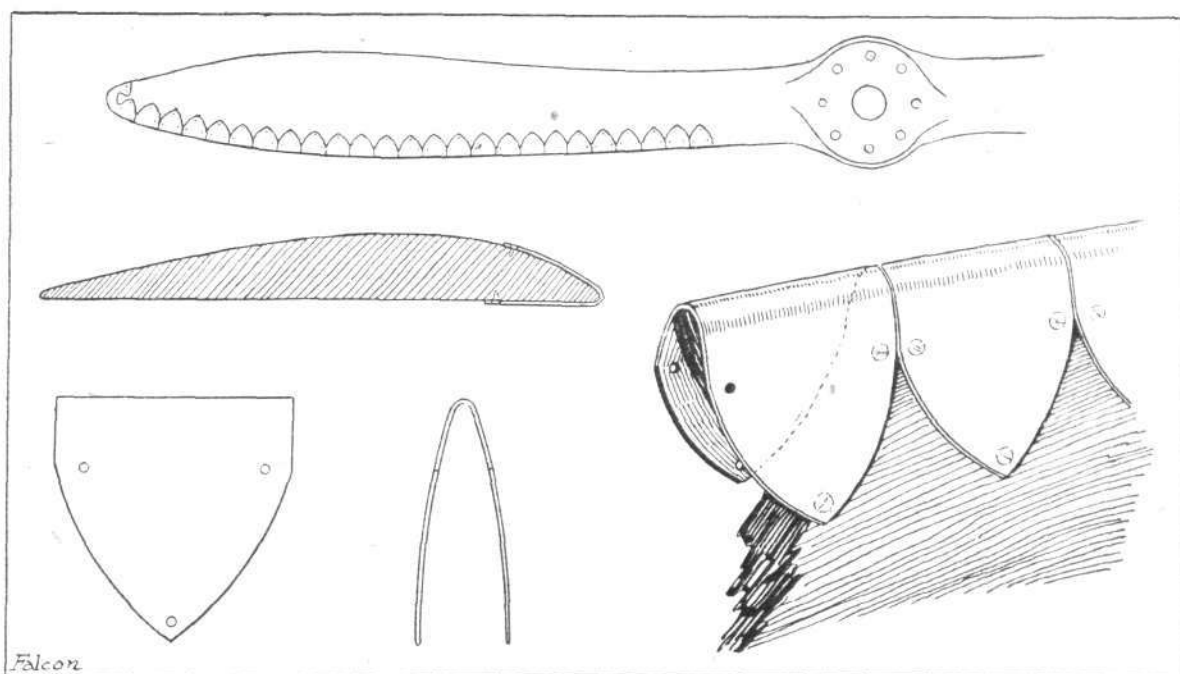
## THE FALCON METAL-TIPPING SCHEME FOR AIRSCREWS

PERHAPS one of the biggest items in the maintenance of an aeroplane, especially in commercial services, is the airscrew. In fact, it is quite surprising when one considers how comparatively short is the life of an airscrew on the average—quite apart from the question of accidental breakages. It is, of course, well known that at high speeds of rotation the blades of wooden air screws are subject to a certain amount of deformation, as a result of which the true shape of the leading edge is more or less altered, with a loss of efficiency in consequence. With the object of overcoming this trouble, it has been the usual practice for some time past to reinforce the leading edge of each blade with metal. This generally takes the form of a single narrow strip of sheet brass, bent to a V-shape in cross-section, which fits over the leading edge for varying lengths from the tip—which is usually completely covered. The metal is hammered to a close fit on to the blade, and secured in place by screws or rivets. While this undoubtedly strengthens the blade and protects the leading edge, it has the following disadvantage. Inasmuch as the wood of the blade is comparatively flexible, whilst the metal

covering we have one possessing a certain amount of flexibility, like the shell of a lobster, which can accommodate itself to the flexing of the blade without any tendency to buckle. The accompanying sketches show this arrangement quite clearly.

These sections can be formed by stamping out blanks, more or less diamond-shape, with the corners suitably rounded off, from sheet metal, the blanks then being bent over at the middle to give the V-section corresponding as near as possible to the angle of the leading edge. The clips thus formed are fitted on to the latter, and secured in the usual way by screws or rivets. It should be noted that owing to the pointed shape of these clips, a greater depth of blade reinforcement is obtained for the same weight than is the case with the single strip of metal.

In order to facilitate the stamping, or cutting out of the blanks, and prevent waste, a series of these joined together could be formed in a single strip, and then separated before or after bending. From a production point of view this system possesses considerable advantage over the old method,



**THE FALCON METAL-TIPPED AIRSCREW:** Our sketches show the general principle of this new system of metal reinforcement for airscrews. At the top is a complete blade with reinforcing clips in position. Below, on the left, a section of the blade and side and end elevations of a clip. On the right a detail view of the clips in position.

is to a certain extent rigid, there is a continual difference of opinion between the two at high rotation speeds. As a result of this it has been found in practice that in a very short time the metal buckles, and when this occurs it means, to all intents and purposes, a scrapped airscrew. The fact that the metal is often hammered in position over the blades must and does mean that the metal is thereby hardened somewhat, so that being brittle it will give rise to trouble all the sooner.

An attempt has been made to remedy this buckling by introducing transverse saw-cuts in the metal strip, but this has not met with any great success. It would seem, however, that in the invention of Mr. David Morgan Davies, of the Falcon Airscrew Co., 113, Cottenham Road, London, N. 19, a successful remedy is available, and one so simple that it is extraordinary that it has not been thought of before now.

Briefly, the principle of this new scheme is as follows. The leading edge of each airscrew-blade is reinforced by a plurality of separate sections or clips of metal, which are secured side by side along the leading edge of the blade, and, if necessary, the tip. Thus, instead of the rigid strip of metal

in spite of the fact that there are a number of units to be individually fitted. The clips are much easier to fit, and, what is more important, the metal is not rendered brittle by constant hammering in fitting.

Another advantage is that an effective securing of the clips to the blades is obtained owing to the fact that the apex of each limb of the clip extends sufficiently far back from the leading edge of the blade—the depth of the single strip hitherto employed being limited on the score of weight—as to enable the innermost holding-down screw to obtain a firm grip in a comparatively thick portion of the blade.

The clips need not, of course, necessarily be confined to the shape shown in the accompanying sketches, and a strip of two or more clips joined together can also be attached to the blade if desirable—near the boss, for instance.

We understand that this system of reinforcement has already given very satisfactory results in actual practice, some airscrews so fitted being employed on the London-Continental services. It is certainly a scheme well worth investigation, and we will watch its progress with interest.

### Review of Airscrew Theories

THIS was the title of a paper read by Major A. R. Low before the Royal Aeronautical Society on November 2. The paper was of a highly technical nature, as was naturally unavoidable in dealing with the subject of airscrews, and

was one which did not lend itself to publication in condensed form. As space does not permit of publishing the paper in full, we would advise readers interested in the subject to obtain a copy of the next issue of the *Aeronautical Journal*, which will doubtless contain Major Low's excellent paper.

# GOTHENBURG 1923 AERO EXHIBITION

THAT the only way aviation can within reasonable time become the vogue with the million is by practical propaganda work can hardly be disputed. With this hard fact to face, a little gathering on Monday at the Métropole, to meet a committee of Swedish representatives of the Gothenburg Aero Exhibition to be held in July and August next year, may do considerable good. The point of the meeting, which was very sympathetically presided over by Admiral Mark Kerr, was to lay before the representatives of the various aircraft and aero engine construction firms in this country the objects of the exhibition, and to invite their co-operation in making it an international success, and, at the same time, spread the gospel of aviation.

Admiral Mark Kerr initially pointed out that he thought British participation was a good business proposition for the firms concerned, as Sweden not only wanted British aircraft, although possibly a bit more expensive than from some other sources, but they *would* have them. And in this respect they were wise, as it must be remembered that Sweden was as vulnerable to attack from the air as was England. At an Exhibition of this character, it was up to England to show that she was not only second to none in aircraft construction, but that she was superior to all others.

Baron Palmstierna, the Swedish Minister, supported the views of the Chairman, and said they were looking to England to reduce, *via* the air, the time for them to reach each other. They wished the British to get into and keep ever in close touch with Sweden, and he therefore welcomed their representatives. Sweden was in acute sympathy with England; it was Russia which had been their great problem in the past.

Gen. Sir Sefton Brancker, in response to his toast, proposed by Admiral Mark Kerr, said he believed in Sweden as an asset to aviation, and if he could only get the price of one battleship transferred, he would guarantee the success of Civil Aerial Transport. He had every confidence in the aircraft industry carrying their burden to a successful issue, and although he was personally more enthusiastic than ever to help them on the road, he feared that road was still a rough one to traverse before they reached smooth ground.

Admiral Kerr, in proposing success to the Gothenburg Exhibition, referred to the wonderful qualities and performances of the Rolls-Royce and Napier engines.

Mr. Ivar Lignell, of Gothenburg, in responding, said the Exhibition covered 72 acres, and already a large number of Swedish exhibitors had secured space. As to the aero section, they might ask why should British exhibitors go to them? It was by propaganda that aviation would rule the world, he claimed, and he quoted from a paragraph in regard to a new French squadron of propagandists which had been formed, and this was an example, he thought should be followed. Again, would they have a chance of selling aircraft if they came over? His reply was that there was considerable prospect, as all the country authorities round the Baltic

had sums ear-marked which they were prepared to put into various aviation schemes. They were waiting to see what there was to offer them of the best value. Moreover, he thought that if the air races, with prizes up to £1,000, which were practically assured between Gothenburg and Rotterdam, materialised, it meant an instant success for the Exhibition. They also were making a great effort to secure squadrons of aeroplanes from the various European Governments to attend at Gothenburg, and he hoped their efforts would be successful, which would mean a great precedent for the future. Sweden was a very vast country, practically oblong. It was essentially a country for aerial services which, he maintained, under their geographical conditions, would be cheaper than railways, or other forms of transport. They would welcome very heartily British exhibitors, and they would give them every facility, in addition to the 50 per cent. reduction in freightage already arranged for, to induce them to come over. They attached such importance to British exhibitors that without them they felt the Exhibition would be a failure. If only a few machines were sent it would suffice to support it to success, and he sincerely hoped they would come.

Sir Sefton Brancker added a few words to his previous remarks, repeating that the Exhibition had his personal sympathy and that of the Air Ministry. The Exhibition administration had asked for a unit of the R.A.F. to be sent to the Exhibition, and he had strongly recommended to have that done. From the civil side it must be regarded as a financial question. He would be willing to help and to be worried to any extent in the matter, but the finality rested with the Treasury, who were the crux of the whole question, but he would do everything in his power to get them all they desired.

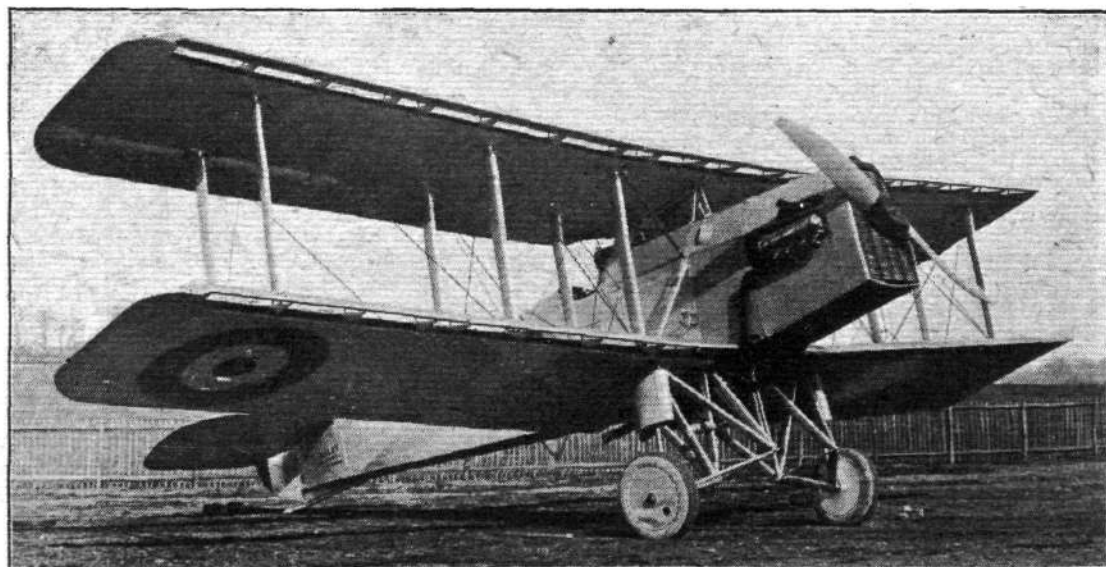
Mr. Handley Page said he was in sympathy with the idea of their making a show, but private enterprise experienced vast difficulty in getting there, on the top of now having to carry on under peace conditions. He thought that instead of the Exhibition giving a big international prize, they would rather help by paying the expenses of, say, half a dozen selected firms, who would undertake to fly to Gothenburg and remain there for demonstration purposes. They would then get a bigger field, and therefore ensure success. Their giving international flying exhibitions would be a popular and he thought a profitable proposition.

Admiral Kerr said that it was proposed to give every machine which arrived at Gothenburg a price per kilometre flown, in getting there, and in addition there were many demonstration prizes which would be available to competitors.

Sir Henry White Smith also felt that they were in sympathy with the whole scheme, and he suggested that an early meeting between the S.B.A.C. and the Exhibition Committee would probably get them down to hard facts more quickly than any other means.



○ ○ ○ ○ ○ ○ ○ ○ ○ ○  
 ○ Another view of the  
 ○ Handley Page  
 ○ "Hanley" torpedo  
 ○ plane, 450 h.p.  
 ○ Napier "Lion"  
 ○ engine: Three-  
 ○ quarter front view.  
 ○ The slots can be  
 ○ clearly seen in the  
 ○ picture. Although  
 ○ this machine is offi-  
 ○ cially known as the  
 ○ "Hanley," it is  
 ○ affectionately called  
 ○ the "Heintz,"  
 ○ owing to the number  
 ○ of levers which the  
 ○ pilot has to operate.  
 ○  
 ○ ○ ○ ○ ○ ○ ○ ○ ○ ○





## AIRCRAFT IN NEWFOUNDLAND

### Activities of the Aerial Survey Co.

In our issue of August 17, 1922, we published an illustrated description of a Martinsyde, type A, Mark II, biplane which had been ordered by the Aerial Survey Co., of 166, Duckworth Street, St. John's, Newfoundland. A few particulars of this firm's activities are now to hand, and these will, we feel sure, be read with interest, showing as they do the great possibilities and variety of uses of aircraft outside England.

Before ordering the Martinsyde described, the firm already had another machine of this type, which had given excellent results, and we learn that it was on account of the satisfactory experience with the first machine that a second was ordered. So far the new Martinsyde has not, of course, had an opportunity of showing what it can do, but it may be of interest to give a brief history of the earlier machine. In November, 1921, the first Martinsyde arrived from England, and was erected at Botwood. After various trial flights, first as a seaplane and then as a land machine, Mr. F. S. Cotton made his first flight to St. John's on January 1 this year. The distance of 150 miles was covered in two hours under arctic winter conditions, and a landing was made on Quidi Vidi Pond, where, apparently, the whole of St. John's waited to welcome the aviators. The machine had been fitted with ice skids, and considerable experiment was necessary before an entirely suitable type was evolved.

During the month of January and the early part of February a series of demonstration and mail-carrying flights were made in the neighbourhood of St. John's, and on several occasions mails were carried to outlying districts at times when all other means of transportation had failed, owing to the heavy fall of snow. Thus, on February 2 Belle Island was ice bound, but not sufficiently to make it possible for traffic to cross over. The difficulty was solved by flying the Martinsyde over, dropping mails, and keeping in communication with the inhabitants.

On March 3 Mr. Cotton started on a flight towards Cartwright on the Labrador, carrying mails for the Government. The machine met with very bad weather on the journey north, and a landing was made at St. Anthony for replenishments. Then the Straits of Belle Isle were crossed, and aerial connection established with Labrador for the first time. Battle Harbour was the landing place, and the machine remained there for three days. From Battle Harbour a flight was made to Cartwright, one of the Hudson Bay Company's posts. Five days later the Martinsyde left Cartwright,

and, stopping at St. Anthony and Botwood, made a flight through to St. John's in less than seven hours. The total distance was about 600 miles, and was covered in five hours' flying time.

With the railway and steamship services disorganised, mails and passengers were carried to places otherwise inaccessible, except by the laborious and tedious dog team. On March 16, 1922, the first ice fields patrol was made from Botwood. The object of this was to assist the steamers in their search for seals. The seals were successfully located, but the steamship owners could not at first be persuaded to contract with the Aerial Survey Company to provide the information. It was not until the failure of their ships to locate the seals that the owners changed their minds, and by then it was rather late for effective results to be obtained. However, even at that several good catches were obtained.

The Martinsyde made several flights while the ice lasted, including a special mission to report on a timber proposition on the west coast. On April 20, just as the ice was melting rapidly, the operations of the season were wound up with a mail flight from Botwood to Battle Harbour and return in one day. During the winter operations a Napier-engined Westland limousine (the one which won the Martlesham competition) was used in addition to the Rolls-engined Martinsyde, the two machines making a joint patrol over the ice fields.

In July of this year floats were fitted to the Martinsyde, and considerable flying has been carried out over the inland waterways and timber areas of the country. Special photographic flights were also undertaken, and it may be mentioned that moving pictures, as well as "still" photographs, were obtained of the wreck of H.M.S. "Raleigh." On the return journey from this flight the machine landed alongside the Company's motor yacht in the Straits of Belle Isle, and the crew had breakfast on board, the seaplane floating astern the while. This made a considerable impression on the local fishermen, many of whom had never seen a seaplane before.

This year the Aerial Survey Company hope to extend their activities considerably, and the work thus done should be excellent propaganda for aircraft. It is to be feared that the possibilities of aviation in such places as Newfoundland have not yet been fully realised at home, and the pioneer work done by the Aerial Survey Company merits the thanks of the whole aviation industry. We trust that the enterprise of this firm will reap its due reward.

## TWO NEW TEXT-BOOKS ON WIRELESS

FROM the Wireless Press, Ltd., 12-13, Henrietta Street, W.C. 2, we have received two new text-books dealing with two important subjects relating to wireless. The science of wireless is very intimately associated with aviation, and will play a very important, if not essential, part in the future development of aerial transport—even more, perhaps, than it has in marine work.

One of the text-books referred to above—"Direction and Position-finding by Wireless," by R. Keen (qs.)—deals with a subject that has proved to be of immense value to aviation, and should therefore appeal directly to readers of *FLIGHT*. From our brief perusal of this book it appears to us to be the most complete work on this particular subject that has yet been produced. It not only deals with the principles and theory of the subject, but also with the constructional details of direction-finding installations for shore service and for the navigation of ships and aircraft. In addition, reference is made to the use of special maps for D.F. work, freak phenomena which cause errors in bearings, faults peculiar to D.F. and how to eliminate them, etc. A chapter is also given to the thermionic valve in which the part this wonderful invention plays in D.F. work is briefly but concisely described.

### "STAMPS OF THE FLYING POST."\*

UNDER the above title we have received a very interesting little book on this fascinating branch of Stamp Collecting. The author, W. E. Hughes, is to be congratulated on having tackled so completely the very difficult problem of collecting the various and scattered records of the earlier attempts of carrying mails by air, and arranging them so concisely. These early flights are given for each country in alphabetical order, and in addition to a brief description of each particular

It should be mentioned that this book is not only intended for the engineer faced with this field of wireless work for the first time, and those in charge of D.F. installations, but should prove to be of immense value to the general student of wireless telegraphy.

The second book referred to is entitled "The Wireless Telephone; What it is and How it Works," and is by Philip R. Coursey. It is published at the modest price of 2s. 6d. Now that wireless broadcasting is about to start in earnest this little book should find a ready market—especially as directions for building a simple receiver for W.T. broadcasts is included in its contents. Apart from this, however, it should appeal to many in the aviation world, for wireless telephony forms an important item in the application of wireless to aviation, and this book places before the reader the essentials of the radio-telephone, and how it operates and is constructed, in a very simple manner indeed. Besides numerous diagrams, sketches and photographs of the different components and apparatus connected with wireless telephony are included in the text. In one of the chapters a very easily understood description of the "valve" is given, together with illustrations of the various types.

flight, details are given of the "labels," stamps or cancellations used in each case. Apart from the various "Semi-Official" labels issued for these flights, all "regular" issues of air mail stamps that have appeared up to August, 1922, are described. "Stamps of the Flying Post" is certainly the most complete work on this subject we have seen, and should be of considerable value and interest to collectors—and non-collectors, for that matter. It is to be regretted, however, the author has not seen his way to include more illustrations of the various stamps, etc.; but then, nothing can be absolutely perfect!

\* "Stamps of the Flying Post," by W. E. Hughes, published by Alan Turton, 32, Great St. Helen's, London, E.C. 3. Price 1s. net.

# Personals

## Married

EDWARD MORTON DRUMMOND, Black Watch, attached R.A.F., eldest son of Mr. and Mrs. Gerald Drummond, of Dayleside, Woodford, Essex, was married on November 9 at the Chapel Royal, Savoy, to DAPHNE, daughter of Mr. and Mrs. WILFRID TAYLOR, of Mitre Court Chambers, Temple, London, E.C. 4.

Flt.-Lieut. THOMAS HENDERSON, M.C., son of the late Mr. Thomas Henderson and of Mrs. Henderson, of Tynemouth, was married on November 9, at the Chapel Royal, Savoy, to EDITH SYLVIA, daughter of the late Mr. ALEXANDER DEUCHAR and of Mrs. Deuchar, of Rodney Court, W. 9. Sqdn.-Ldr. A. S. Morris was best man.

Brigadier-General GUY LIVINGSTONE, C.M.G., late of the R.A.F., was married on November 14, at St. Martin's

Registry Office, London, W.C., to Mrs. DIVA AMELIA PRIMROSE, formerly the wife of Mr. A. B. Primrose, of New York.

## To be Married

The engagement is announced, and the marriage will shortly take place, between Flight Lieut. ROBERT HUGH HANMER, M.C., R.A.F., eldest son of the Rev. Hugh and Mrs. Hanmer, The Rectory, Whitchurch, Salop, and MARY HELEN, youngest daughter of Mr. and Mrs. NATHANIEL SPENS, Palace Gate Mansions, 29, Palace Gate, W. 8.

The engagement is announced between Capt. A. M. WAISTELL, D.S.C. (R.A.F., retired), youngest son of the late Mr. Charles Waistell, Northallerton, Yorks., and Mrs. Waistell, Totland Bay, I.W., and HONORA MARY, elder daughter of Mr. and Mrs. F. H. CHRISTIAN, Droxford, Hants. The marriage will take place in India early in March.

## THE GRAND PRIX DE PARIS

At present it appears as if the Grand Prix de Paris, for commercial aeroplanes, will prove a failure. Only five machines were entered, and of these one arrived too late to be admitted to the competition. A second machine crashed and killed its pilot, leaving but three machines, of which one is a sporting rather than a commercial type.

The following brief particulars of the machines may be of interest:—

No. 1, Caudron biplane, type C.74, 4-300 h.p. Hispano-Suiza (Poiree). Length, 57 ft. 6 ins.; span, 82 ft.; area, 1,400 sq. ft.

No. 3, Farman biplane, type F.90, 300 h.p. Salmson (Bossoutrot). Length, 30 ft. 2 ins.; span, 46 ft.; area, 690 sq. ft.

No. 4, Breguet biplane type 20 (Leviathan), four 225 h.p. Breguet engines driving single tractor airscrew (Thiery). Length, 45 ft. 9 ins.; span, 83 ft. 7 ins.; area, 1,500 sq. ft.

No. 5, twin-engined "Express-Mureaux," 2-370 h.p. Lorraine-Dietrich (Labouchere). Length, 43 ft. 7 ins.; span, 68 ft.; area, 1,330 sq. ft. (This machine is a French-built Vickers "Vimy Commercial.")

No. 2, a three-engined Henry Potez, with 180 h.p. Hispano-Suiza engines, piloted by Douchy, arrived too late at Le Bourget to be admitted to the competition. It is understood that the pilot lost his way in flying to Le Bourget, and was delayed to such an extent as to arrive too late. This is a pity, as the three-engined Potez, type X, is a well-built machine with good possibilities.

The competition itself consisted of various tests for which points were given, as well as for general features thought to be desirable in commercial aeroplanes, and of flights over a 600-kilometres circuit.

The preliminary tests and features were divided up as follows, points being given in each class: A, horse-power expenditure per passenger carried. B, Use of wireless telephone during flight, up to a distance of at least 10 kilometres (6½ miles). C, (a) Starting one engine in the air; (b) starting all engines on the ground. D, Safety tests, mainly in the matter of taking off and climbing to a certain altitude, there doing turns and figures of eight. E, Starts and landings, the distances being measured and points awarded accordingly. The maximum number of points to be awarded are as follows: Speed, 400; safe flying, 250; power per passenger, 150; starting and landing, 75; starting the engines, 50; and use of wireless, 25; giving a total of 950 points.

On the first two days of the competition, November 10 and 11, the preliminary tests were carried out. Thiery, on the Breguet "Leviathan," obtained the following points: A, 25, B 25, C (a) 25 and (b) 25, D 250, and E 50, giving a total of 400 points. Bossoutrot, on the Farman, gained 275 points, composed as follows: A 150, B 0, C (a) 25 and (b) 25, D 0, and E 75. Poiree, on the four-engined Caudron, was third with 200 points, as follows: A 0, B not passed, C (a) 25, (b) 25, D 150, and E 0. Labouchere, on the "Express-Mureaux," was last with 150 points, i.e., A 50, B 25, C (a) 25, (b) 25, D 0, and E 25.

Owing to bad weather, with fog and low clouds, the two flights of 600 kilometres—one of which, with full loads and

one compulsory landing; and the other, over the same distance but with half-load and without landing—had to be postponed from day to day.

On Tuesday, November 14, the weather was still unfavourable, but it was decided to run the first speed competition over a 43-kilometres circuit, which had to be covered fourteen times, with a compulsory landing at Le Bourget on the seventh lap. Poiree got away well with full load, and was on his fifth lap when, as he failed to return at the approximate time he was expected, a machine was sent out to look for him. The machine, on its return, brought the news that Poiree's machine had been seen crashed in a field at Villepinte, near Aulnay-sous-Bois. Later it was learned that the machine while travelling at considerable speed, had turned over in the air and crashed to the ground, the three occupants, Poiree and his two mechanics Courcy and Bobillier, being killed instantly.

At the moment it is not certain what happened, but according to eye-witnesses, and an examination of the wreckage, the conclusion has been formed that one of the aft airscrews burst and damaged the fuselage, thus causing the machine to lose all controllability. An enquiry is being made which may throw more light on the cause of the sad accident, and may even prove this suggestion to be wrong. Poiree was one of the earlier French pilots, having flown long before the war. He did a great deal of work in Russia, but returned after the outbreak of the revolution, and had been piloting for the Caudron firm for a considerable period.

Of the remaining three machines in the Grand Prix the Breguet "Leviathan" had to land a short distance from Le Bourget owing to petrol system trouble. Bossoutrot, on the Farman, and Labouchere, on the "Express-Mureaux," both completed the first half of their 600 kilometres, landing as prescribed at Le Bourget. On starting for the second half of the course, Labouchere discovered a leak in the water circulation of his Lorraine engines, and had to abandon the attempt. This left only Bossoutrot, who completed the course alone, his time for the 600 kilometres being 4 hrs. 7 mins. 12½ secs.

Thus the Grand Prix can scarcely be said to have been a success, and it may be questioned whether it was wise to hold this competition at this time of the year, when fogs and unfavourable weather are to be expected. We sincerely sympathise with the Caudron company, and with French aviation generally, in the sad loss which has befallen them. As one of the objects of the Grand Prix was to attract public attention to aviation, it is to be feared that more harm than good has been done by the accident, which cost three men their lives.

Simultaneously with, but entirely separate from, the Grand Prix de Paris for commercial machines, was to have been flown a squadron competition for military machines, piloted by service pilots, but owing to bad weather these were postponed. They were to consist of speed races over two laps of the Circuit of Paris: Le Bourget, Cormeilles, Toussus-le-Noble, Orly, Chelles, Le Bourget, giving a total distance of 200 kilometres. The machines were to be started off in squadrons.



# THE ROYAL AIR FORCE

London Gazette, November 7, 1922

## General Duties Branch

Flt. Lt. R. H. C. Usher, M.C., A.F.C., is granted a permanent commn. retaining his present substantive rank and seny.; Aug. 31. Flying Offr. E. J. McLoughlin is granted a permanent commn. in the rank stated, with effect from Oct. 24, 1919 (since promoted). *Gazette*, Oct. 24, 1919, appointing him to a short service commn., is cancelled. The following are granted permanent commns. as Flying Offrs., with effect from dates indicated, retaining their present seny. *Gazettes* of dates indicated in brackets, appointing them to short service commns., are cancelled:—A.P. Ritchie, A. F. C., July 14, 1920; (Aug. 10, 1920). A. J. Rankin, Sept. 27, 1920; (Oct. 1, 1920).

The following are granted short service commns. as Flying Offrs., with effect from, and with seny. of, the dates indicated:—A. C. Hine; Oct. 24. A. L. Moore; Oct. 30. F. C. Baker is granted a short service commn. as Flying Offr. for three years on active list, with seny. Dec. 24, 1919; Oct. 1.

The following are granted short service commns. in ranks stated for three years on active list, with effect from and with seny. of Oct. 1:—Flt. Lt. R. Hutton. Flying Offrs.: F. H. Bedford, M.C., M.M.; H. W. Parker; C. L. Watson.

Lt. R. L. Yates, R. Scots Fus., is granted temp. commn. as Flying Offr. on seconding for four years' duty with R.A.F.; Oct. 26. Pilot Offr. E. H. M. David to be Flying Offr.; June 21. Flt. Lt. S. G. Frost, M.B.E., is placed on retired list on account of ill-health contracted in the Service; Nov. 1.

The following are transferred to Res.:—

Class A.—Flying Offr. M. H. McErlean; Nov. 8.  
Class B.—Flying Offr. L. E. Vine; Oct. 24. (Substituted for *Gazette* Oct. 24.) Observer Offr. H. Wisnekowitz, M.C.; Nov. 8.  
Class C.—Flying Offr. O. A. P. Heron, D.F.C.; Nov. 7.

Flying Offr. T. W. Cave, M.C., relinquishes his short service commn. on account of ill-health contracted in the Service, and is permitted to retain rank of Lt.; Oct. 24. *Gazette*, Oct. 24, regarding the transfer to the Res. of Flying Offr. T. W. Cave, M.C., is cancelled. The short service commns. of the following Pilot Offrs. are terminated on cessation of duty:—J. C. Lindsay, M.C.; Nov. 1. W. H. E. Labatt; Nov. 8. A. W. Taylor; Nov. 8.

## Stores Branch

The following are granted short service commns. as Flying Offrs. for accountant duties, with effect from dates indicated:—H. Hedderwick, J. P. A. Fulton; Oct. 1. W. Vaughan-Shaw, H. C. Roberts; Oct. 6.

## Medical Branch

Lt. H. J. Henderson, Army Dental Surg., is granted temp. commn. as Flying Offr. on attachment for duty with R.A.F.; Oct. 26. He will receive emoluments from Army Funds.

## Nursing Service

Miss N. C. M. Kelly (Staff Nurse) relinquishes her appt. on account of ill-health; Nov. 8.

## Erratum

*Gazette* of Jan. 1, 1919 (*FLIGHT*, Jan. 9, 1919, p. 50):—For 231825 Sgt. (Obs.) W. Clark, read 203947 Sgt. (Obs.) W. L. Clark.

London Gazette, November 10, 1922

## General Duties Branch

The following Pilot Officers on probation are confirmed in rank:—C. B. Greet, H. S. C. Bassett, A. E. B. Bateman, D. R. Dawson, B. C. Duke, R. B. Fleming, L. P. Hirsh, P. J. A. Hume-Wright, H. W. Pierce, S. H. G. Trower, E. S. C. Vaughan, M.C., G. Wake, A. W. B. Walker, M. Wiblin, J. B. Wilson, L. Young; Oct. 1. J. B. Rose; Oct. 3.

The following are transferred to the Reserve:—

Class A.—Flying Offr. L. A. Walters; Nov. 11.  
Class C.—Sqn. Ldr. T. S. Impey, Flying Offr. W. M. Long; Nov. 11.  
Flt. Lt. G. E. Wilson to take rank and precedence as though his appt. as Flt. Lt. bore date Jan. 1, immediately following Flt. Lt. O. W. de Putron; Aug. 9.

## Medical Branch

Lt. N. F. Smith, Dental Surgn., Gen. List, Army, is granted temp. commn. as Flying Offr. on attachment for duty with R.A.F.; Sept. 28. He will continue to receive emoluments from Army funds. (Substituted for *Gazette* Oct. 10.)

## ROYAL AIR FORCE INTELLIGENCE

**Appointments.**—The undermentioned appointments in the Royal Air Force are notified:—

Air Commodore C. L. Lambe, C.B., C.M.G., D.S.O., from Air Ministry (D. of E.) to Half Pay List. 1.8.22.

Group Captain E. F. Briggs, D.S.O., O.B.E., from Headquarters, R.A.F., Iraq, to command Basrah Group Headquarters (Iraq). 1.10.22.

Squadron Leaders A. Gray, M.C., from R.A.F. Depot (Inland Area) to Central Flying School (Inland Area) (Supernumerary). 10.11.22. M. G. B. Copeman, from No. 2 Armoured Car Company (Middle East) to R.A.F. Depot (Inland Area) (Supernumerary). 21.10.22. A. E. Panter, B.A., from Egyptian Group Headquarters (Middle East) to Headquarters, Iraq Command (Iraq) (Supernumerary). 14.10.22. D. Power, M.C., Aircraft Depot (Middle East) to Headquarters, Iraq Command (Iraq) (Supernumerary). 13.10.22. R. A. G. Elliott, M.B., B.A., from Headquarters, R.A.F., Middle East (Middle East), to Egyptian Group Headquarters (Middle East). 10.6.22. J. H. Lidderdale, O.B.E., from Air Ministry (Dept. of A.M.P.) (D.D.O.) to R.A.F. Depot (Inland Area) (Supernumerary). 6.10.22. F. N. Smartt, M.B., B.A. The notification which appeared in R.A.F. Intelligence No. 84, dated 1.11.22, wherein this officer was posted from R.A.F. Depot (Inland Area) to No. 1 Group Headquarters (Inland Area) is hereby cancelled. H. E. M. Watkins, A.F.C., from Headquarters, R.A.F., Iraq, to command Rest Camp (Iraq). 1.10.22. W. Sowrey, D.F.C., A.F.C., from R.A.F. Depot (Inland Area) to No. 1 Flying Training School (Inland Area). 13.10.22. Substituted for the notification which appeared in R.A.F. Intelligence No. 84 dated 1.11.22, wherein this officer was posted as stated above, with effect from 1.11.22.

Flight Lieutenant K. H. Riversdale-Elliott, from Palestine Wing Head-

quarters (Middle East) to No. 47 Squadron (Middle East) (Supernumerary). 25.9.22. C. K. Chandler, M.B.E., from School of Naval Co-operation and Aerial Navigation (Coastal Area), from No. 267 Squadron (Mediterranean). 30.10.22. F. H. Laurence, M.C., from Boys' Wing (Cranwell), to R.A.F. Depot (Inland Area) (Supernumerary). 14.11.22. (Actg. Sqn. Ldr.) W. B. Johnston from Army (R.A.P.C.) to Central Accountant Office, Poona, for accountant duties; on secondment from the Army. 1.10.22. E. A. Lumley, M.C., M.B., from No. 47 Squadron (Middle East), to No. 4 Flying Training School (Middle East). 11.10.22. J. T. T. Forbes, from No. 4 Flying Training School (Middle East) to Aircraft Depot (Middle East). 12.10.22. G. H. H. Maxwell, M.B., from Headquarters, R.A.F. (Middle East), to No. 47 Squadron (Middle East). 6.10.22. A. J. Brown, D.S.O., from R.A.F. Central Hospital (Coastal Area) to Headquarters (Coastal Area). (Supernumerary.) 30.10.22. B. F. Beatson, D.T.M., from Research Laboratory and Medical Officers' School of Instruction (Coastal Area) to R.A.F. Depot (Inland Area) (Supernumerary). 6.11.22. A. Williams from Inland Area Aircraft Depot (Inland Area) to Headquarters, R.A.F., Cranwell. 13.11.22. H. E. Hayes, from Headquarters, R.A.F., Cranwell, to Inland Area Aircraft Depot (Inland Area). 8.11.22. M. V. German, from Headquarters, R.A.F. (Iraq), to command R.A.F. Prison (Iraq). 1.10.22. L. O. Brown, D.S.C., A.F.C., from Headquarters R.A.F. (Iraq) to Basrah Group Headquarters (Iraq). 1.10.22. H. B. Russell, A.F.C., from Headquarters, R.A.F. (Iraq), to Rest Camp (Iraq) for duty as Adjutant. 1.10.22. C. S. Richardson, M.B.E., from No. 6 Squadron (Iraq) to Headquarters, R.A.F. (Iraq). 17.7.22.

Lieutenant J. B. Glubb, M.C. (R.E.), to Headquarters, Iraq Command. On appointment as G.S.O. 3 (Intell.). On attachment to Royal Air Force for two years.

## "IRAQ COMMAND"

With effect from October 1, 1922, the Royal Air Force, Iraq, is designated the "Iraq Command."

The A.O.C., Iraq Command, is responsible for the command and administration of all units of the Royal Air Force, the British Army and the Indian Army stationed at Iraq.

The command of the army units forming the infantry brigade, i.e. infantry battalions, artillery units, and sapper and miner company, will be vested in the Colonel Commandant, Infantry Brigade, who will be under the orders of the A.O.C.

The Colonel Commandant will, on all questions of policy and all major questions of administration in regard to the

forces under his command, address the A.O.C., who will communicate with the Air Ministry on such matters.

The Colonel Commandant will communicate direct with the War Office, or the Commander-in-Chief in India, on minor administrative questions regarding the military forces under his command.

The A.O.C. will be directly responsible for the command of the Iraq Levies, and for the general administration of the force. Detailed administration of the Levies will be the responsibility of the Officer Commanding the Iraq Levies, and of his staff. No responsibility in this respect will devolve on the military staff.

## CORRESPONDENCE

The Editor does not hold himself responsible for opinions expressed by correspondents. The names and addresses of the writers, not necessarily for publication, must in all cases accompany letters intended for insertion in these columns.

### ROLLS-ROYCE AND INCORRECT STATEMENTS

[2065] Persistent statements are being circulated to the effect that all or the majority of the parts of the new 20 h.p. Rolls-Royce chassis are manufactured at the Works at Springfield, Mass., of Rolls-Royce of America, Inc.

We should be glad if you will allow us to state most emphatically that there is not an atom of foundation for this ridiculous statement.

It is difficult to understand how anyone should believe

that we should import parts from America, seeing the magnitude of our plant at Derby.

As a matter of fact, the orders for the American-made 40-50 h.p. Rolls-Royce car are now exceeding every week the number of chassis produced, and the writer is on the point of leaving for America to discuss, amongst other things, the proposal that the English Company should send chassis to America to made good this deficiency.

Nov. 1st.

C. JOHNSON,  
Managing Director, ROLLS-ROYCE, LTD.

## SOCIETY OF MODEL AERONAUTICAL ENGINEERS (London Aero-Models Association)

ON the 10th inst. at Headquarters, a very interesting debate was opened by Mr. Pavely on "Wing Sections," before 25 members, most of whom joined in the discussion which followed. The Chairman, Mr. Houlberg, concluded an interesting meeting with a general survey of the proceedings.

Mr. Evans reports that on Saturday at Sudbury some interesting flying was done, Messrs. A. and W. Rasmussen flying fuselage tractors. The former had several good flights of 30 secs. and over, and the latter did well with a spar model. Mr. Evans had his new fuselage model, which, not yet being tuned up, did not give the expected results. Tea at the old farm-house concluded a pleasant afternoon.

On the 27th October it was proposed by Mr. M. Levy and seconded by Mr. Williams that "Record cups shall be awarded to the members making the best improvement on records during each calendar month." This was carried unanimously.

On Sunday morning last another excellent meeting on Parliament Hill was held. Over a dozen members entered their model gliders in an attempt to improve the record of 41 $\frac{3}{8}$  secs. held by Mr. H. Davies. This was accomplished by Mr. C. Burchell, who put up a glide of 44 secs. Mr. Whelpton's glider was very consistent, but could not get over 27 secs. duration. Mr. Howse's best glide was 27 $\frac{1}{2}$  secs., H. Davies 36 secs., B. K. Johnson 35 $\frac{1}{2}$  secs. Nearly all the members managed to do 20 secs. and over, which shows a great improvement on the last attempt.

There was also some excellent model aeroplane flying, Messrs. Rippon and Davies with Farman Type models, Messrs. Burchell and Whelpton with enclosed fuselage models, and other members with spar models, giving a good exhibition.

Given favourable weather conditions on Sunday next, there will be a large entry of enclosed models for Mr. Pilcher's Challenge Cup.

At Headquarters, 20, Great Windmill Street, Piccadilly Circus, W. 1, on Friday next, at 7.30 p.m., an interesting discussion is promised by Mr. Rippon and Mr. Burchell. Subject: "Large Models v. Small Models." Mr. B. K. Johnson has kindly offered to make lantern slides of interesting models and flights, etc., if members will let him have negatives of same and data.

A. E. JONES.  
Hon. Sec.

## IMPORTS AND EXPORTS, 1921-1922

**AEROPLANES**, airships, balloons and parts thereof (not shown separately before 1910). For 1910 and 1911 figures see "FLIGHT" for January 25, 1912; for 1912 and 1913, see "FLIGHT" for January 17, 1914; for 1914, see "FLIGHT" for January 15, 1915; for 1915, see "FLIGHT" for January 13, 1916; for 1916, see "FLIGHT" for January 11, 1917; for 1917, see "FLIGHT" for January 24, 1918; for 1918, see "FLIGHT" for January 16, 1919; for 1919, see "FLIGHT" for January 22, 1920; for 1920, see "FLIGHT" for January 13, 1921; and for 1921, see "FLIGHT" for January 19, 1922.

	Imports		Exports		Re-Exportation	
	1921.	1922.	1921.	1922.	1921.	1922.
Jan. ...	4,459	1,152	87,128	76,552	2,285	23
Feb. ...	2,379	567	59,829	69,129	19	1,100
Mar. ...	14	1,471	118,199	166,607	1,565	100
April...	1,370	3,846	138,983	139,995	450	5,880
May ...	3,350	2,416	59,624	167,999	1,818	4,254
June ...	5,181	816	79,713	129,137	—	14,530
July ...	540	1,039	530,628	24,405	860	—
August	343	198	111,595	88,910	—	685
Sept. ...	620	3,043	145,755	71,508	—	44
Oct. ...	4,256	633	101,567	40,225	580	90
	22,512	15,181	1,433,021	974,467	7,577	26,706

## SIDE-WIND

DUNLOP COMPANY'S advertising in the past has probably been one of the outstanding examples of bold publicity, and has always reflected the belief of the company in the power of advertising as a means towards large production and consequently low selling prices. We now learn that this policy is to be maintained and even elaborated, so as to keep the famous name before the public next year with all the dominance characteristic of Dunlop advertising in the past. The advertising contractors acting for the Dunlop Company are Messrs. A. J. Wilson and Co., Ltd.—a firm whose name has been closely identified with the motor industry since cars first appeared on the road. Sir Charles F. Higham acts as adviser on Dunlop publicity.

## PUBLICATIONS RECEIVED

*The Internal Combustion Engine. Vol. I—Slow-Speed Engines.* By Harry R. Ricardo, B.A. London: Blackie and Son, Ltd. Price 30s. net.

*The Wireless Weather Manual: A Guide to the Reception and Interpretation of Weather Reports and Forecasts.* Air Ministry, M.O. 255. Meteorological Office. London: H.M. Stationery Office, Kingsway, W.C. 2. Price 9d. net.

*Les Avions.* By Jean A. Lefranc. Bibliotheque des Merveilles. Paris: Librairie Hachette et Cie., Boul. Saint-Germain, 79. Price 6 fr.

*Wireless: Popular and Concise.* By Lieut.-Col. C. G. Chetwode Crawley, R.M.A. London: Hutchinson and Co. Price 1s. 6d. net.

*The Wireless Telephone: What It Is and How It Works.* By Philip R. Coursey, B.Sc. London: The Wireless Press, Ltd. Price 2s. 6d.

*Aeronautical Research Committee Reports and Memoranda.—*  
No. 773: *Lateral Control at Large Angles of Incidence.* By A. S. Batson, B.Sc., and C. N. H. Lock, M.A. March, 1921. Price 9d. net., by post 10d. (Ae. 39.).  
No. 779: *Experiments on Model of Rigid Airship R. 32.* By R. Jones, M.A., D. H. Williams, B.Sc., and A. H. Bell. September, 1921. Price, 9d. net., by post 10d.  
No. 780 (Ae 40): *Aerodynamic Pressure on Airship Hull in Curvilinear Flight.* By R. Jones, M.A. November, 1921. Price 6d. net., by post 7d.  
No. 781 (Ae. 41): *Motion of Airships under certain Imposed Movements of the Rudders.* By R. Jones, M.A. November, 1921. Price 1s. 3d. net., by post 1s. 4d.  
No. 784 (Ae. 37): *Seaplanes—Taking Off and Alighting.* By Flight Lieut. E. S. Goodwin, A.F.C. December, 1921. Price 3d. net., by post 3 $\frac{1}{2}$ d.  
No. 789 (M. 11): *Preliminary Report on Properties of Commercially Pure Nickel as a Standard Material for Fatigue Investigations.* By G. A. Hankins, A.R.C.Sc. November, 1921. Price 9d. net., by post 10d. London: H.M. Stationery Office, Kingsway, W.C. 2.

## AERONAUTICAL PATENT SPECIFICATIONS

Abbreviations: cyl. = cylinder; I.C. = internal combustion; m. = motors. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.

### APPLIED FOR IN 1921

Published November 9, 1922

- 7,254. T. E. W. T. HENDERSON. Seats. (186,944.)  
18,040. A. MARCHETTI. Stabiliser for flying-apparatus sustained by propellers. (186,975.)  
18,436. A. P. THURSTON and BRISTOL AEROPLANE CO., LTD. Planes, etc. (186,990.)  
19,251. G. W. and H. E. JOHNS. Mooring means for airships. (187,036.)  
28,896. SOC. DES MOTEURS SALMON (SYSTEM CANTON-UNNE). Compression relief system for radial-cyl. I.C. engines. (171,375.)  
32,131. SKYWING AIRCRAFT CORPORATION. I.C. engines. (172,308.)

### APPLIED FOR IN 1922

Published November 9, 1922

- 1,300. N. F. JOHNSTON. Rotary engines. (187,170.)

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